REMARKS

Claim Amendments

Claim 1 was amended for clarification purposes to recite a step that was inherent in the claim previously, i.e., the separation of bitumen from the sand was inherent in the recovery of separated bitumen. Further, the preamble of claim 1 is amended to clarify the body of the claim reciting the actual separation step. Claim 5 is amended to correct an obvious grammatical error. The amendments do not narrow the scope of the claims. No new matter is added. To the extent that the amendments avoid the prior art or for other reasons related to patentability, competitors are warned that the amendments are not intended to and do not limit the scope of equivalents which may be asserted on subject matter outside the literal scope of any patented claims but not anticipated or rendered obvious by the prior art or otherwise unpatentable to applicants. Applicants reserve the right to file one or more continuing and/or divisional applications directed to any subject matter disclosed in the application which has been canceled by any of the above amendments.

Claims Rejections – 35 USC § 103

The rejection of claims 1-13 under 35 U.S.C. 103(a) as being unpatentable over Nilsen (U.S. 6,872,239) in view of Maciejewski (U.S. 6,119,870) is respectfully traversed for the reasons now following.

The present invention relates to a method including pretreatment of an aerated oil sand slurry containing bitumen droplets and sand and then separating the sand from the bitumen. More particularly, the aerated oil sand slurry is first introduced into the elongated closed vessel (coalescer) of the present invention to allow bitumen droplet coalescence and then the treated oil sand slurry is subsequently introduced into a separator for separating out the sand from the bitumen.

Nilsen, on the other hand, does not disclose injecting or introducing an oil sand slurry into an elongated closed vessel for pretreatment, nor does it disclose introducing a treated oil sand slurry into a separator for separating sand from bitumen. Nilsen discloses introducing "oil-water-gas mixtures with their content of sand" (see column 4, line 60) into cyclone **7**, which cyclone **7** is designed for the purpose of removing sand from the oil-water emulsion (see column 5, lines 7-9). The sand outlet from the cyclone is denoted as **10** in FIG. 1. Thus, it is a desanded emulsion that is delivered to coalescer **15** for pre-treatment. Therefore, Nilsen discloses a coalescer that is designed to promote coalescence of the oil that is present in a desanded oil-water emulsion. The coalescer in Nilsen then uses microwave radiation to heat the water, but not the oil, in the emulsion to obtain a kind of pre-separation of the components of the emulsion before the latter reaches the gravity separator **11** (see column 5, lines 24-30). Further, there is no disclosure in Nilsen from which to conclude or suggest that it is an elongated vessel. The drawings, description and purpose of the coalescer in Nilsen give no hint of an elongated vessel or any vessel capable of "injecting the slurry stream through the inlet to cause the slurry to rotate as it advances longitudinally through the chamber," as recited in the claims. The gravity separator **11** of Nilsen is designed and arranged for the purpose of separating oil from water in the treated desanded oil-water emulsion. Accordingly, the separator **11** comprises a gas outlet **12**, a water outlet **13** and an oil outlet **14** (see column 5, lines 19-21). Nilsen does not disclose separating sand from bitumen in the gravity separator **12**.

Nilsen fails to disclose or suggest treating an oil sand slurry by first coalescing bitumen droplets present in the oil sand slurry in an elongated closed vessel (coalescer) and then separating out sand from bitumen in a separator such as a gravity separator. It is understood by those of skill in the art that an oil sand slurry, which routinely contains anywhere from 50 to 65 wt % solids, is an entirely different feed than the desanded oil-water emulsion produced in cyclone **7** during the Nilsen process. Thus, a person skilled in the art of oil sand slurry processing would not look to Nilsen for guidance as to how to promote bitumen coalescence in an oil sand slurry prior to separating sand from bitumen. Nilsen clearly teaches coalescence of oil present in an oil-water emulsion and relies on microwaves to promote such coalescence. There is no suggestion of the manner for treating an oil sand slurry or the manner in which such is done according to the claimed invention.

Nilsen also does not disclose injecting an oil sand slurry stream [containing bitumen droplets and sand] into an elongated closed coalescing vessel whereby the slurry is rotated as it advances longitudinally through the chamber of the elongated closed vessel, so that bitumen droplets move inwardly toward the chamber axis and promote bitumen droplet contact, coalescence and growth. Contrary to the statement in the Office Action, there is no disclosure or suggestion that Nilsen's coalescer, **15**, is an elongated vessel forming a chamber having a circular cross-section.

Nilsen also does not disclose or suggest introducing expelled treated slurry stream – still containing sand – into a separator for separating out sand from bitumen. As discussed above, the sand is removed according to the Nilsen method well before the slurry reaches the separator, **11**. Thus, there can be no step of sand removal here.

As argued in applicants' previous Reply – which arguments are incorporated by reference herein – Nilsen discloses a completely distinct method and apparatus from the claimed invention and fails to disclose or suggest a number of the claimed elements.

Maciejewski fails to make up for the deficiencies of Nilsen to suggest the elements of the claimed method or apparatus. Maceijewski discloses simply a cyclone separator for desanding an oil sand slurry. The cyclone separator has two separate outlets for (1) a lean bitumen froth stream, and (2) a coarse solids (sand) stream. Maciejewski does not disclose or suggest a method or apparatus having a separate coalescer and separator. In particular, there is no suggestion of a coalescer where oil sand slurry is first treated and then the entire stream is expelled through an outlet. Maciejewski teaches nothing regarding a step – separate from separating the sand – for promote bitumen coalescence.

There is no suggestion or incentive from Nilsen or Maciejewski to replace or modify the Nilsen coalescer, **15**, with the Maciejewski desander. Maciejewski's device is for sand separation and Nilsen suggests no need for a desander cyclone separator because the sand is removed by the Nilsen process before the coalescer, **15**. If one of ordinary skill in the art were to use the Maciejewski separator in Nilsen, they would use it in place of the cyclone separator, **7**, of Nilsen. Such modified process/apparatus would give no suggestion of applicants' invention using – prior to sand separation – an "elongated closed vessel forming a chamber having a circular cross-section and a longitudinal axis" for "injecting the slurry stream through the inlet to cause the slurry to rotate as it advances longitudinally through the chamber, so that bitumen droplets move inwardly toward the chamber axis and are concentrated, thereby increasing the probability of bitumen droplet contact, coalescence and growth."

Further, since Nilsen is not directed towards a process for producing a treated oil sand slurry, there is no motivation for a person skilled in the art to modify the Nilsen process to: (1) eliminate the step of desanding in cyclone, 7, prior to the coalescing step; (2) substitute the Nilsen coalescer with a modified Maciejewski desander that no longer serves its purpose of separating sand from bitumen; and (3) substitute the Nilsen gravity separator designed to receive a treated desanded stream with a separator designed to receive a treated oil sand slurry and separate sand from bitumen; so as to arrive at the claimed invention. Such extreme modification would be completely contrary to the distinct inventions and objectives of Nilsen and Maciejewski.

In summary, it is respectfully submitted that the combination of Nilsen in view of Maciejewski does not render obvious to one of ordinary skill in the art the invention as claimed in claims 1-13. Furthermore, it is respectfully submitted that there would be no motivation to those in the art to combine Nilsen with Maciejewski as proposed. Thus, the rejection under 35 U.S.C. §103 should be withdrawn. Favorable consideration is respectfully requested.

In view of the above remarks, it is believed the application is now in condition for allowance and such allowance is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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